

In re Patent Application of  
PARSCHE  
Serial No. 10/695,046  
Filed: OCTOBER 28, 2003

REMARKS

Applicants thank the Examiner for the careful and thorough examination of the present application, and for the indication of allowable subject matter. Claims 1-39 remain pending in the application. Favorable reconsideration is respectfully requested.

I. The Invention

As shown in FIGS. 1-4, for example, the disclosed invention is directed to a radiating planar or printed antenna that is configured to enhance the gain relative to its area. The antenna includes a substrate, such as a dielectric material, and an electrically conductive circular ring on the substrate and having an outer diameter and an inner diameter concentrically arranged. The outer diameter is less than 1/10 an operating wavelength, and preferably about 1/20th, so that the antenna is electrically small relative to the wavelength. The inner diameter is in a range of  $\pi/6$  to  $\pi/2$  times the outer diameter, and preferably is  $\pi/4$  times the outer diameter.

II. The Claims are Patentable

Claims 1-39 were rejected as allegedly being indefinite for the reasons set forth on page 2 of the Office Action. Applicant directs the Examiner to review the claims and specification as it is clearly recited (e.g. Claim 1) that the inner diameter is "in a range of  $\pi/6$  to  $\pi/2$  times the outer diameter." The Examiner has mistakenly read the symbol  $\pi$  (pi) in the claims as an "n". Accordingly, Applicant believes that Claims 1-39 meet the statutory requirements of 35 U.S.C. §112, second paragraph.

Claims 1-4, 11-15, 22-29 and 36-39 were rejected over a newly cited prior art reference, Schantz (U.S. Patent

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No. 6,593,886) for the reasons set forth on page 3 of the Office Action. Applicant contends that Claims 1-4, 11-15, 22-29 and 36-39 clearly define over the cited reference, and in view of the following remarks, favorable reconsideration of the rejection under 35 U.S.C. §103 is requested.

Each of the independent Claims 1, 15 and 26 at least include an electrically conductive circular ring on a substrate and having an outer diameter and an inner diameter concentrically arranged. The outer diameter is less than 1/10 an operating wavelength so that the antenna is electrically small relative to the wavelength. The inner diameter is in a range of  $\pi/6$  to  $\pi/2$  times the outer diameter, and according to Claim 15, is  $\pi/4$  times the outer diameter. It is these combinations of features which are not fairly taught or suggested in the cited reference and which patentably define over the cited reference.

The Examiner has relied on the Schantz '886 patent as disclosing a planar loop antenna. As correctly acknowledged by the Examiner, The Schantz patent does not teach anything regarding the outer diameter of the electrically conductive ring being less than 1/10 an operating wavelength of the antenna. Furthermore, there is no discussion in the Schantz patent of the relative dimensions of the outer diameter and inner diameter. However, the Examiner has taken the position that the claimed relative parameters would have been obvious through routine frequency scaling.

The Examiner has failed to give proper weight to the claimed relative parameters/dimensions of the outer and inner diameter of the annular ring antenna which, as discussed in the present specification, reduces the size of the antenna while providing the greatest gain for the smallest area. It is Applicant who discovered this advantage.

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As the Examiner is aware, to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim features. The initial burden is on the Examiner to provide some suggestion of the desirability of doing what the Applicants have done. To support the conclusion that the claimed invention is directed to obvious subject matter, either the reference must expressly or impliedly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the reference. Both the suggestion to make the claimed combination and the reasonable expectation of success must be founded in the prior art and not in Applicants' disclosure.

There is simply no teaching or suggestion in the cited reference to provide the combination of features as claimed. Accordingly, for at least the reasons given above, Applicant maintains that the cited reference does not disclose or fairly suggest the invention as set forth in Claims 1, 15 and 26. Furthermore, no proper modification of the teachings of this reference could result in the invention as claimed. Thus, the rejection under 35 U.S.C. §103(a) should be withdrawn.

It is submitted that the independent claims are patentable over the prior art. In view of the patentability of the independent claims, it is submitted that their dependent claims, which recite yet further distinguishing

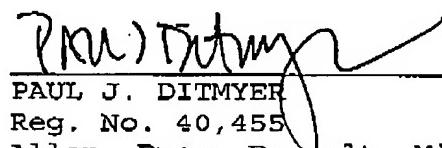
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features are also patentable over the cited references for at least the reasons set forth above. Accordingly, these dependent claims require no further discussion herein.

III. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the present application is in condition for allowance. An early notice thereof is earnestly solicited. If, after reviewing this Response, there are any remaining informalities which need to be resolved before the application can be passed to issue, the Examiner is invited and respectfully requested to contact the undersigned by telephone to resolve such informalities.

Respectfully submitted,

  
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CERTIFICATE OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY that the foregoing correspondence has been forwarded via facsimile number 571-273-8300 to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 this 16<sup>th</sup> day of August, 2005.



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